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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/545,272	04/07/2000	Senthil Sivakumar	CISCO-1787	1978

7590 11/30/2004

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EXAMINER

MILLS, DONALD L

ART UNIT PAPER NUMBER

2662

DATE MAILED: 11/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/545,272

Applicant(s)

SIVAKUMAR, SENTHIL

Examiner

Donald L Mills

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 July 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 14-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 14-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 14-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miller et al. (US 6,310,874 B1), hereinafter referred to as Miller, in view of Ketcham et al. (US 6,594,272), hereinafter referred to as Ketcham.

Regarding claims 14, 22, and 30, Miller discloses a switch, which comprises:

Processing a packet having a destination MAC address to determine whether a mapping between the destination MAC address and a port exists (Referring to Figures 1 and 2, the address resolution processor examines the destination MAC address in the header and whether entry (port) corresponds to the it. See column 3, lines 53-59.)

If no mapping between the destination MAC address and port exists, then until a reply is received from a port associated with the destination MAC address iteratively: performing broadcast flooding of packets for a first determined time period (Referring to Figure 3, the data unit is flooded, step 56, and flow returns to step 50 and discontinues flooding if the destination address is in the address table in step 52 of the switch. See column 4, lines 61-66 and column 5, lines 4-6.)

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Miller does not disclose *ceasing broadcast flooding of packets for a second predetermined time period*.

Ketcham teaches incorporating anti-looping codes in a network, which iteratively floods packets to all adjacent nodes in range only, once then inhibits the packet from being rebroadcast by any node in the domain more than once (See column 6, lines 52-61.)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the anti-looping system of Ketcham in the switch of Miller. One of ordinary skill in the art at the time the invention was made would have been motivated to do so in order to prevent infinite flooding loops in bridged networks.

Regarding claims 15 and 23 as explained in the rejection statement of claims 14 and 22, the primary references teach all of the claim limitations of claims 14 and 22 (parent claims).

Miller does not disclose wherein *the first predetermined time period and said second predetermined time period is set by a network administrator*.

Miller teaches after data unit is flooded, step 56, and flow returns to step 50 and discontinues flooding if the destination address is in the address table in step 52 of the switch, the time period of flooding is set by the system administrator (See column 4, lines 61-66 and column 5, lines 4-6.) Ketcham teaches incorporating anti-looping codes in a network which iteratively floods packets to all adjacent nodes in range only once then inhibits the packet from being rebroadcast by any node in the domain more than once, for a set period of time established by the system designer (See column 6, lines 52-61.)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the anti-looping system of Ketcham in the switch of Miller. One of

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ordinary skill in the art at the time the invention was made would have been motivated to do so in order to prevent infinite flooding loops in bridged networks.

Regarding claims 16 and 24 as explained in the rejection statement of claims 14 and 22, the primary references teach all of the claim limitations of claims 14 and 22 (parent claims).

Miller does not disclose *prior to the performing broadcast flooding of packets, consulting a filter table to determine said first predetermined time period.*

Miller teaches after data unit is flooded, step 56, and flow returns to step 50 and discontinues flooding if the destination address is in the address table in step 52 of the switch, the time period of flooding is set by the system administrator (See column 4, lines 61-66 and column 5, lines 4-6.) Ketcham teaches incorporating anti-looping codes in a network which iteratively floods packets to all adjacent nodes in range only once then inhibits the packet from being rebroadcast by any node in the domain more than once, for a set period of time established by the system designer (See column 6, lines 52-61.)

It would have been obvious choice in design to one of ordinary skill in the art at the time the invention was made to implement the a table outlining the flooding period in system of Ketcham and of Miller. One of ordinary skill in the art at the time the invention was made would have been motivated to do so in order to allow variable flooding periods as dictated by a preset table.

Regarding claims 17 and 25 as explained in the rejection statement of claims 14 and 22, the primary references teach all of the claim limitations of claims 14 and 22 (parent claims).

Miller does not disclose *setting a flag to indicate a quiet period in which no broadcast flooding is to be performed after said first predetermined time period passes.*

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Ketcham teaches a site ID field 22 which is used to uniquely identify nodes on a given site, such that nodes on an adjacent site that happen to receive the packet 20 ignore the packet (See column 4, lines 9-11.)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the anti-looping system of Ketcham in the switch of Miller. One of ordinary skill in the art at the time the invention was made would have been motivated to do so in order to prevent infinite flooding loops in bridged networks.

Regarding claims 18 and 26, the primary reference further teaches *wherein an entry is made in a filter table if no mapping between the destination MAC address and port exists, then until a reply is received from a port associated with the destination MAC address* (Referring to Figures 1 and 2, the address resolution processor generates a new address table entry that includes the MAC address and the ports associated with the new address, then the response is received. See column 3, lines 63-67 and column 4, lines 1-4.)

Regarding claims 19 and 27, the primary reference further teaches *wherein the entry is removed from the filter table after a port associated with the destination MAC address replies to the broadcast flooding of packets* (Referring to Figure 4, if the address is determined to have been learned and the address resolution processor is done processing the data unit, the learn pending indicator is reset for the I/O ASIC as indicated by step 72. See column 5, lines 27-31.)

Regarding claims 20 and 28, the primary reference further teaches *wherein an entry is made in the filter table indicating a number of packets that are directed at the destination MAC address* (Referring to Figures 1 and 2, the address resolution processor generates a new address table entry that includes the MAC address, of the packet (indicating a number of packets that are

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directed) and the ports associated with the new address, then the response is received. See column 3, lines 63-67 and column 4, lines 1-4.)

Regarding claims 21 and 29 as explained in the rejection statement of claims 14 and 22, the primary references teach all of the claim limitations of claims 14 and 22 (parent claims).

Miller does not disclose *wherein the entry indicating the number of packets directed at a destination address is used to determine which entry to delete from the filter table if the filter table becomes overpopulated with entries.*

Miller teaches the address resolution processor generates a new address table entry that includes the MAC address and the ports associated with the new address, and then the response is received (See column 3, lines 63-67 and column 4, lines 1-4.)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to delete the previous entry in the address table when the physical memory of the table is exceeded. One of ordinary skill in the art would have been motivated to do so in order to accommodate new routes that must be formed and stored.

Response to Arguments

3. Applicant's arguments with respect to claims 14-30 have been considered but are moot in view of the new grounds of rejection. The Examiner would like to note if the claims were to reflect flooding the same node and then disallowing flooding of that same node, the claims would then overcome the prior art.

Conclusion

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4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Donald L Mills whose telephone number is 571-272-3094. The examiner can normally be reached on 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on 571-272-3088. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

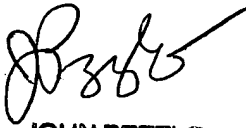
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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Donald L Mills

DL Mills

November 17, 2004


JOHN PEZZLO
PRIMARY EXAMINER